Motozi TAGAWA*: Fern miscellany (6)

田川基二*：羊歯類雑説 (6)

(62) **Paradennstaedtia** Tagawa, gen. nov.

Genus *Dennstaedtiae* proxime affinis, differt: pinnis pinnulisque articulatis, fronde glabra, sed ad insertionem pinnularum dense puberula, stipite rachique glabris, nitidis, muricatis.

Terrestrial, rhizome creeping and stout, hairy but never scaly. Frond large, distichous, long-stipitate, devoid of scales and hairs, but furnished with a tuft of hairs at the base of pinnules; stipe and rachis shining, muricate; blade ample, pinnately decompound, anadromic in sequence of pinnules; pinnae and pinnules articulated to the axes; veins free, pinnately branched. Sori marginal on the frond, terminal on the veins, solitary in the deep sinuses; indusium extrorse, convex, adnate to the lateral margin of a subequal, similary modified, concave leaf-lobule, the soral pouch thus formed spherico-cyathiform, deflexed, the mouth of which shallowly bilabiate; receptacle short; annulus interrupted; spores triplanate.

The type and sole species is

Paradennstaedtia glabrata (Ces.) Tagawa, comb. nov. ——*Dicksonia glabrata* Ces. Rend. Ac. Napoli **16**: 24, 28. 1877, type from New Guinea. ——*Dennstaedtia glabrata* (Ces.) C. Chr. Ind. 217. 1905; Ind. Suppl. III. 70. 1934; Dansk Bot. Ark. **9**. no. 3, 42. 1937, synonyms fully quoted.

The range is from Negros and Celebes to New Guinea and Fiji. The following specimen has been examined;

North-west New Guinea. Angi district; Sakumi to English Bibak, S. Miki, *April* 18. 1934 (K**).

Paradennstaedtia is sharply distinguished from the relatives of *Dennstaedtia* chiefly by the presence of articulations at the base of pinnae and pinnules. In other respects, it is like *Dennstaedtia*, to which it is manifestly related.

(63) **Oenotrichia tenera** (Christ) Tagawa, comb. nov.——*Microlepia tenera* Christ, Not. Syst. **1**: 53. 1909, type from Yunnan; Ching, Ic. Fil. Sin. **2**: pl. 101. 1934; Tagawa, Journ. Jap. Bot. **23**: 76. 1949. —— *Leucostegia tenera* (Christ) Ching, Bull. Fan Mem. Inst. Biol. **11**: 53. 1941.

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** K and T indicate the Herbarium of the Kyoto University and of the Tokyo University respectively.

Known from Yunnan, Kweichow and Formosa; additional specimen from Formosa is:

Prov. Tainan: Bunkikiyo 2000 m, in silvis rara. Faurie 407 (K).

I venture to transfer *M. tenera* to the genus *Oenotrichia,* with which it agrees much better in indusia. The indusia are broadly reniform or nearly semi-orbicular and the attachment is to the vein only. The rhizome is creeping, about 3 mm thick, dark-brown, and clothed with pale reddish-brown, articulated hairs.

As to this species Ching (1941) says: "Until now this distinct fern has been referred to *Microlepia,* chiefly on account of its green pubescent leaves of herbaceous texture and the absence of rhizome. The excellent specimens now before me have wide-creeping rhizome, about 4 mm across, densely clothed in persistent, appressed, and dorsally fixed linear brown scales with a dark-colored line in the centre and the lower half of a broadly elliptic outline and of paler color and the high phyllopodia left behind on the rhizome by leaves of previous years' growth. The rhizome is of green color upon stripping the tightly appressed scales. The epiphytic habit and the scaly creeping rhizome indicate at once the species a davallioid fern, not a *Microlepia* at all." This statement is too much inconsistent with Christ's original description. Ching's materials from Yunnan are, I suppose, not *M. tenera.*

(64) **Polystichum** Roth.——*Cyrtomidictyum* Ching, Bull. Fan Mem. Inst. Biol. **10**: 182. 1940.

Cyrtomidictyum, typified by *C. lepidocaulon* (Hook., *Aspidium*) Ching, has no peculiarity of generic significance.

The argument is the same as to *Sololepidum* Christ, typified by *S. glaciale* (Christ, *Polystichum*) Christ, which is *P. Duthiei* (Hope) C. Chr. But Ching, l. c. 10, maintains this as a genus of one species.

(65) **Elaphoglossum angulatum** (Bl.) Moore, Ind. 5. 1857; C. Chr. et Holttum, Gard. Bull. **7**: 290. 1934; Tagawa, Mem Coll. Sci., Univ. Kyoto, ser. B. **20**: 28. 1951.——*Acrostichum angulatum* Bl. Enum. 101. 1828, type from Java; Fl. Jav. Fil. 25. t. 6. 1829.——*Elaphoglossum Ogatai* C. Chr. Dansk Bot. Ark. **9**. no. 3. 67. 1937, type from Arisan, Formosa; Ogata, Ic. Fil. Jap. 8: pl. 381. 1940.——*Elaphoglossum laurifolium* Moore sensu Hayata, Ic. Pl. Form. **5**: 293. f. 117. 1915.

Formosa, central districts and southwards, on mossy rocks or near the base of tree trunks in thick mountain forests, altitude 1500-2500 m, sometimes occurring in open and rather dry places. Specimens examined:

Prov. Taityû: between Hattûkwan and Tonpo, Niitaka-gun, Tagawa 487 (K), juvenile plants with short-creeping rhizome and approximate small leaves, stipe 2–4 cm long, blade ovate, 1–3 cm long by 1–1.5 cm wide, obtuse, short-decurrent at base. Prov. Tainan: Arisan, Ogata, isotype of *E. Ogatai* C. Chr. in Herb. Ogata; Arisan in rupibus 2650 m alt., Faurie 621 (K); inter Tôzan et Mingetsu in monte Arisan, Itô and Hayata, labelled *E. laurifolium* Moore by Hayata (T**), Prov. Takao: between Takimi and Hinokiyama, Kizan-gun, Tagawa 1872(K); inter Takimi et Hinode, Kizan-gun, Okamoto (K); Miharasi, Kizan-gun, Tagawa 3257 (K). Prov. Taitô: between Kôyô and Keitô, Kwanzan-gun, Tagawa 2951 (K); between Asahi and Izumo, Kwanzan-gun, Tagawa 3250 (K).

The range is from Java and Borneo (C. Chr. et Holttum, l. c.) to Luzon (v. A. v. R. Mal. Ferns Suppl. 423. 1917), Tonkin (C. Chr. et Tardieu-Blot, Not. Syst. **8**: 209. 1939), and Formosa.

As to *E. Ogatai* C. Chr., Christensen says,: "……, but it is extremely like *E. angulatum* (Bl.) Moore. Blume's figure (Fl. Javae pl. 6) could very well illustrate our species, which differs, however, in its remarkably thin texture and the distinctly but shortly duecurrent lamina." The texture of *E. Ogatai* is not "herbacea," as stated in his original description, but thin-coriaceous, and *E. augulatum* has also "the distinctly but shortly decurrent lamina," I can not, therefore, draw a sharp line between these two species.

(66) **Elaphoglossum callifolium** (Bl). Moore, Ind. 7. 1857; 353. 1862; Tagawa, Mem. Coll. Sci., Univ. Kyoto, ser. B. **20**: 30. 1951.——*Acrostichum callifolium* Bl. Enum.100. 1828, type from Java; Fl. Jav. Fil. 22. t. 4. 1829.

Formosa, restricted to southern districts, rather rare, on densely mossy tree trunks in damp thick mountain forests, altitude 1000–1500 m. Specimens examined:

prov. Takao: Okuyama in the basin of the River Sangô-kei, Kizan-gun, Tagawa 1790 (K); between Kuwarusu and Mt. Daibu, Tyôsyû-gun, Tagawa 2263 (K). Prov. Taitô: near Baribugai, Taitô-gun, Tagawa 2931 (K); between Syussuiha and Sinsuiei, Taitô-gun, Tagawa 2377 (K).

New to Formosa. The range is from Java and Borneo (C. Chr. et Holttum, Gard. Bull. **7**: 289. 1934) to Philippine (v. A. v. R. Mal. Ferns 714. 1908), Annam, Cochinchina (C. Chr. et Tardieu-Blot, Not. Syst. **8**: 209. 1939), and Formosa.

The shape of sterile blade is subject to great variation. Materials from Formosa are roughly divisible into the following three forms in virtue of the shape and size of their sterile blade.

1. Typical form; blade elliptic- or oblong-lanceolate, 40–45 cm long by 7–8 cm wide, acute or acuminate at both ends, on stipe 10–25 cm long. Tagawa 1790 and 2377.

2. Blade elliptic-lanceolate or lanceolate, 20–30 cm long by 4–6 cm wide, acute or acuminate at apex and gradually attenuated towards the base, otherwise hardly different from the typical form. Tagawa 2931.

3. Blade narrowly lanceolate, 25–30 cm long by 3–4 cm wide, acute at apex and short-attenuated towards the base, and hence having an appearance of an *E. Yoshinagae* Makino with long stipe, but scales on rhizome and at the base of stipe identical with those of the typical form. Tagawa 2263.

E. latifolium (Sw.) J. Sm. was reported by Henry from South Cape (List Pl. Form. 116. 1896); the species is generally regarded as exclusively tropical American, and his determination was probably not quite accurate. There is every probability that Henry's plant is *E. callifolium* Moore.

(67) **Elaphoglossum pendulifolium** Tagawa, Mem. Coll. Sci., Univ. Kyoto, ser. B. **20**: 30. 1951.

Rhizomate breviter repente, ca. 5 mm crasso, paleis rigide membranaceis fusco-brunneis lanceolatis ad 5 mm longis parce ciliatis dense obtecto. Folio pendulo, stipite approximati, similibus gracili, ad phyllopodia fusco-brunnea 1.5 cm alta paleis iis rhizomatis similibus obtecta articulato. Folii sterilis stipite 10–18 cm longo, pallide rubro-brunneo, paleis parvis adpressis membranaceis lanceolatis acuminatis sparse ciliato-fimbriatis laxe vestito, sursum mox nudo; lamina anguste lanceolata, medio latissima, utrinque attenuata, apice basique acuminata, 15–30 cm longa, 2–3 cm lata, statu sicco rigide chartacea, margine membranacea albida pellucida, supra glabra, laete viridi, subtus pallide viridi, paleis minutis radiatim laceratis sparse punctata; costa tenui, supra tenuiter sulcata, subtus sursum plana, deorsum leviter elevata paleis paucis iis stipitis similibus onusta; venis sub angulo 45° e costa egredientibus, plerisque furcatis, apice leviter clavatim incrassatis saepe furcatis. Folii fertilis stipite 20 cm longo crassiore, lamina 10–20 cm longa, 2 cm lata, utrinque acuta.

Formosa. Prov. Takao: Keinanzan, Kizan-gun, Tagawa 2041, type (K).

An epiphyte with pendulous leaves on densely mossy tree trunks in moist thick mountain forests, altitude ca. 1600 m. I have never seen any specimens except the type collection. This new species is a relative of the Asiatic form of

"*E. conforme,*" from which it is distinguished by the longer and pendulous leaves with less scaly stipe and narrowly lanceolate blade of much thinner texture, the blade being gradually attenuated towards both ends. The scales on rhizome and stipe are also distinctive.

(68) **Neocheiropteris normalis** (Don) Tagawa, comb. nov.——*Polypodium normale* Don, Fl. Nepal. l. 1825, type from Nepal; Takeda, Notes Roy. Bot. Gard. Edinb. 8: 286· 1915.——*Microsorium normale* (Don) Ching, Bull. Fan Mem. Inst. Biol. **4**: 299. 1933, cum syn.——*Neolepisorus normalis* (Don) Ching, Bull. Fan Mem. Inst. Biol. **10**: 13. 1940.

North India and Burma to South-west China and Indo-China, according to Takeda also in Sumatra, Takeda mentioned Formosa for one of the localities of this species, but I have never collected this fern in Formosa, nor seen any specimens from that Island. From China the following specimens have been examined:

Yunnan: Shang-pa, Tsai 58677 (K); Ping-pien Hsien, Tsai 55425, 60177 (K).

(69) **Neocheiropteris subhastata** (Bak.) Tagawa, comb. nov.——*Polypodium subhastatum* Bak. Journ. Bot. **27**: 177. 1889, type from Hupeh, China; Takeda, Notes Roy. Bot. Gard. Edinb. 8: 291. 1915; Ogata, Ic. Fil. Jap. **3**: pl. 144. 1930; Makino, Ill. Fl. Jap. 918. f. 2752. 1940.——*Microsorium subhastatum* (Bak.) Ching, Bull. Fan Mem. Inst. Biol. **4**: 298. 1933.——*Polypodium hederaceum* Christ, Bull. Acad. Int. Geogr. Bot. **11**: 215. cum fig. 1902, type from Kweichow, China.——*Polypodium superficiale* var. *chinense* Ros. Fedde Repert. **13**: 134. 1914 type from Kweichow, China.——*Polypodium subhastatum* β. *longifrons* Takeda, l. c. 292, type from Japan.——*Microsorium subhastatum* var. *longifrons* (Takeda) Ching, l. c.

Central China to warm countries of Japan. Many specimens from Japan have been examined.

This fern has all the appearance of a species of *Microsorium*, and is usually included in that genus; but the rhizome scales provided, when young, with a tuft of reddish-brown hairs on the back, the peltate scales covering young sori and the blade potentially in hastate condition justify in transferring this species from *Microsorium* to *Neocheiropteris*.

N. subhastata shows great variety in the size and form of leaves. Sterile or sparsely soriferous leaves are usually elongate-deltoid or deltoid-ovate and with truncate or braodly cordate or sometimes more or less hastate base; leaves of such form as this were called by Takeda *Polypodium subhastatum* α. *heder-*

aceum (Christ) Takeda, l. c. 292, and are usually found on the terrestrial part of the rhizome. Fully soriferous leaves are generally lanceolate, and with acute or truncate base; leaves of this form are usually found on the epiphytic part of the rhizome and were named by Takeda *P. subhastatum β. longifrons* Takeda. It is a matter of course that there occur many intermediate forms.

(70) **Arthromeris Proteus** (Cop.) Tagawa, comb. nov. —— *Polypodium Proteus* Cop. Phil. Journ. Sci. **1**. Suppl. II, 164. t. 25. 1906.——*Crypsinus Proteus* (Cop.) Cop. Gen. Fil. 206. 1947.

Luzon: between Syyoc and Panai, Benguet, E. B. Coepeland 1941 bis, isotype (K).

Judged from the small and simpler leaves alone, *Polypodium proteus* Cop. would certainly be placd in *Crypsinus*, but its pinnae are articulated to the rachis. At any rate, there is no reason for not including it in *Arthromeris*.

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(62) **Paradennstaedtia** Tagawa, gen. nov. 嚢堆構造は *Dennstaedtia* コバノイシカグマ屬に一致するが，羽片と小羽片とは羽軸に關節し，葉は無毛，ただ小羽片の附着點にのみ毛があり，葉柄や中軸は無毛，光澤があり，小さい突起があつてざらざらしている。ただ1種 *Paradennstaedtia glabrata* (Ces.) Tagawa がネグロス，セレベスからニューギネア，フイジーにわたつて分布している。

(63) 貴州，雲南，臺灣にある *Microlepia tenera* Christ の包膜は，廣腎形又は半圓形で葉脈にのみ附着しているから，イシカグマ屬から *Oenotrichia* に移して，學名を *Oenotrichia tenera* (Christ) Tagawa とする。

(64) 秦仁昌はオリヅルシダのために新屬 *Cyrtomidictyum* をたてたが，オリヅルシダをキノデ屬から區別する必要はないと思う。

(65) 臺灣のクスノハアツイタ *Elaphoglossum Ogatai* C, Chr. は *E. angulatum* (Bl.) Moore と同種である。ジヤバ，ボルネオからルゾン，トンキン，臺灣にわたつて分布している。

(66) ジヤバ，ボルネオからフィリッピン，安南，交趾支那にわたつて分布している *Elaphoglossum callifolium* (Bl.) Moore は臺灣の南部にもある。

(67) *Elaphoglossum pendulifolium* Tagawa は臺灣高雄州旗山郡蕃地の溪南山で發見した新種である。アリサンアツイタ *E. conforme* Sw. に似ているが，樹幹に附着して葉は下垂し，裸葉片は狹披針形，硬紙質，兩端に向つて段々狹くなりとがつている。

(68) 秦仁昌のクリハラン屬 *Neolepisorus* は *Neocheiropteris* から區別する必要はないと思う。それで *Neolepisorus normalis* (Don) Ching の學名を *Neocheiropteris normalis* (Don) Tagawaとする。

(69) またヤノネシダもクリハランの類であるから，學名を*Neocheiropteris subhastata* (Bak.) Tagawa とする。

(70) ルゾンの *Polypodium Proteus* Cop. の學名を *Arthromeris Proteus* (Cop.) Tagawa と改める。